

Notice of Allowability

Application No.

10/804,912

Examiner

Jeffrie R. Lund

Applicant(s)

PARK ET AL.

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-4.
3. ☒ The drawings filed on 19 March 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The thin film deposition apparatus as claimed in claim 1, specifically, the lower pumping baffle and the upper pumping baffle are stacked on the bottom of the reactor block between the outer circumference of the wafer block and an inner circumference of the reactor block, a lower pumping region is formed between the lower pumping baffle and an inner sidewall of the reactor block, and an upper pumping region is formed between the upper pumping baffle and the inner sidewall of the reactor block, wherein the deposition space is connected to the upper pumping region by a plurality of upper pumping holes formed in the upper pumping baffle, wherein the upper pumping region is connected to the lower pumping region by a plurality of lower pumping holes formed in the lower pumping baffle, and wherein the lower pumping region is connected to the exhaust line was not found in or suggested by the art.

The closest art are patents like Luo et al, US Patent 6,582,522 B2; and Jin et al, US Patent 6,802,906 B2. They both disclose an upper baffle 101 stacked on a lower baffle 106. The gas flows from the processing chamber through holes in the upper baffle 106 into the upper pumping region, and through holes in the lower baffle into the lower pumping region and from the lower pumping region to the exhaust. However the lower baffle is not: on the bottom of the reactor block, but is located in the side wall and centered between the lid and bottom of the reactor block; the lower pumping region is not formed between the lower pumping baffle and the inner side of the sidewall of the reactor block, but is formed by a passage located inside the sidewall (not the side of the

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inner sidewall) and the lower pumping baffle; and the upper pumping region is not formed between the upper pumping baffle and the inner sidewall of the reactor block, but formed entirely by the upper pumping baffle. Therefore, neither Luo et al nor Jin et al teach the structure of the claimed pumping system. No teaching was found to suggest moving and redesigning the design of the pumping system of Luo et al or Jin et al. Moreover, the lower pumping baffle of Luo et al and Jin et al is specifically centered between the bottom and lid of the reactor block and at the side of the wafer block, and designed with a plurality of indentations to reflect heat back to the wafer block. Therefore moving the lower pumping baffle from the middle of the wall near the wafer block to the bottom of the reactor block and redesigning the structure of the lower pumping baffle would destroy the reference and would require a large amount of experimentation, testing and development with no surety of success, if it is at all possible.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
12/13/04